

Feiqin Xie, Ph. D.

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Satellite remote sensing of the atmosphere, boundary layer, tropopause and gravity waves dynamics.

EDUCATION

5/2006 University of Arizona, Tucson, Arizona

- Ph.D. in Atmospheric Sciences
- Minor: Remote Sensing and Spatial Analysis

9/1998 – 7/2001 Peking University, Beijing, China

- M. S. in Atmospheric Physics and Atmospheric Environment

9/1994 – 7/1998 Lanzhou University, Lanzhou, Gansu, China

- B. S. in Atmospheric Physics and Atmospheric Environment with honor

PROFESSIONAL EXPERIENCE

10/2008 – present Postdoctoral Scholar, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA

- Conducted research in the global tropopause variations from GPS occultation observations, which will be used for validation of the IPCC (Intergovernmental Panel on Climate Change) climate model simulation results.
- Participated in NASA funded gravity waves dynamics observed from various satellite remote sensing data such as GPS/MISR/AIRS/MLS etc.

5/2006 – 10/2008 Postdoctoral Fellow, Department of Earth and Atmospheric Sciences, Purdue University, West Lafayette, IN

- Conducted research in the state-of-the-art airborne GPS remote sensing system; developed the retrieval scheme and formulate the test flight plans for field campaigns;
- Involved in NSF funded GISMOS (GNSS Instrument System for Multistatic and Occultation Sensing) development project.
- Led a project funded by NOAA as a Co-investigator to improve the data assimilation of the GPS radio occultation (RO) data in the lower troposphere.

8/2001 – 5/2006 Ph.D. student and research assistant, Department of Atmospheric Sciences, University of Arizona, Tucson, AZ

- Developed an End-to-end simulation system for the study of space-borne GPS RO measurements in the neutral atmosphere.
- Proposed a novel approach to correct the GPS occultation measurement errors in the lower troposphere due to the so-call super-refraction, which is often observed at the height of planetary boundary layer.

9/2004 – 12/2005 Teaching assistant, *Radiative Transfer & Introduction to Weather and Climate*, University of Arizona, Tucson, AZ

- Grade exams, answer questions.

9/1998 – 6/2001 Master student and research assistant, Center for Environmental Sciences, Peking University, Beijing, China.

- Conducted large-eddy-simulation to investigate the dense gas dispersion behavior in the unstable surface layer.
- Investigated the total column ozone spatial and temporal variations over Asia and Europe.
- Involved in the Environmental Planning Project for downtown area of Yuxi city in Yunnan Province, China.

PEER-REVIEWED PUBLICATIONS

1. **Xie, F.**, C. O. Ao, T. Meehan, S. Sokolovskiy and E. R. Kursinski, 2008: Diffraction-corrected Simulation of GPS Radio Occultation Measurements in the Presence of Super-refraction, to be submitted.
2. **Xie, F.** and E. R. Kursinski, 2008: Super-refraction Over Global Oceans: Its Climatology and Impact on GPS Occultation Retrievals, in preparation.
3. **Xie, F.**, J. S. Haase, S. Syndergaard, 2008: Profiling the Atmosphere Using the Airborne GPS Radio Occultation Technique: A Sensitivity Study, *IEEE Transactions on Geoscience and Remote Sensing*, DOI:10.1109/TGRS.2008.2004713.
4. **Xie, F.**, S. Syndergaard, E. R. Kursinski and B. M. Herman, 2006: An Approach for Retrieving Marine Boundary Layer Refractivity from GPS Occultation Data in the Presence of Super-refraction, *J. Atmos. Oceanic Technol.*, 23, 1629-1644.
5. Cai, X., **F. Xie**, and J. Chen, 2002: Large-eddy Simulation for Unstable Surface Layers, *Acta Scientiarum Naturalium Universitatis Pekinensis* (in Chinese with English Abstract), 38 (5), 698-704.
6. Li, Y., X. Cai, **F. Xie**, 2002: Recent Variations of Total Ozone Over East Asia, *Environmental Science* (in Chinese with English Abstract), 23(supplemental), 103-105.
7. **Xie, F.**, and X. Cai, 2000: Spatial and Temporal Variation of Total Ozone Over East Asia and Europe: An Inter-Comparison, *J. Environ. Sci. Health*, A35 (10), 1923-1930.
8. **Xie, F.**, and X. Cai, 2000: Spatial and Temporal Variation of Total Ozone Over East-Asia, *Acta Scientiae Circumstantiae* (in Chinese with English Abstract), 20 (5), 513-517.

POSTER PRESENTATIONS IN SYMPOSIUMS AND CONFERENCES

1. Haase J. S., **F. Xie**, P. Muradyan, J. L. Garrison, T. Lulich, J. Voo, K. M. Larson, New Atmospheric Observations from the Airborne GNSS Instrument System for Multistatic and Occultation Sensing (GISMOS), AGU Fall Meeting, San Francisco, California, December 15-19, 2008
2. Haase J. S., **F. Xie**, J. L. Garrison, T. Lulich, and E. Calais: Moisture Profiling with Radio Occultation on Aircraft and Stratospheric Balloons, Centre Nationale d'Etudes Spatiales Meeting, Toulouse, France, June 26, 2008.
3. **Xie, F.**, J. S. Haase, T. Lulich, P. Muradyan, J. L. Garrison, S. Syndergaard and E. Calais: Profiling the Atmosphere with an Airborne GPS Receiver System, 88th AMS Annual Meeting, New Orleans, Louisiana, January 20-24, 2008.

4. Garrison, J. L., and M. Walker, J. S. Haase, T. Lulich, **F. Xie** and Coauthors, 2007: Development and testing of the GISMOS instrument, *IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*, Barcelona, Spain.
5. **Xie, F.**, J. S. Haase, S. Syndergaard, T. Lulich, P. Muradyan, J. L. Garrison and E. Calais: Error Estimation of Airborne GPS Radio Occultation Measurements: Simulation Analysis, Second Formosat-3/COSMIC Data Users Workshop, Boulder, Colorado, October 22-24 2007.
6. Kursinski, E. R., **F. Xie** and C. O. Ao: Issues Regarding GPS RO-Derived Tropospheric Humidity, First Formosat-3/COSMIC Data Users Workshop, Boulder, Colorado, October 16-18, 2006.
7. **Xie, F.**: Characterizing the Earth's Atmosphere Using GPS Radio Occultation Measurements: Opportunities and Challenges, Department of Earth and Atmospheric Sciences Seminar (Invited), Purdue University, August 31, 2006.
8. **Xie, F.**, S. Syndergaard, E. R. Kursinski and B. M. Herman: Reconstruction of the Marine Boundary Layer Refractivity in the Presence of Super-refraction (Poster), Second GPS Radio Occultation Data Users' Workshop, Lansdowne, Virginia, August 22-24, 2005.
9. **Xie, F.**, S. Syndergaard, E. R. Kursinski, C. O. Ao and B. M. Herman: An Approach for Retrieving Marine Boundary Layer Refractivity From GPS Occultation Data, AGU Fall Meeting, San Francisco, California, December 5-9, 2004
10. **Xie, F.**, X. Cai and J. Chen: An Inter-Comparison of Spatial and Temporal Variation of Total Ozone over East Asia and Europe, the First National Conference on Environmental Simulation and Pollution Control, Beijing, China, November 4-5, 1999.

INVITED REVIEW OF OTHERS' WORK FOR

1. GPS Solutions
2. IEEE International Geoscience and Remote Sensing Symposium
3. Advances in Space Research

MEMBERSHIP

1. American Geophysical Union, Full Member, since 2004
2. American Meteorological Society, Full Member, since 2005

AWARDS

1. GPSC Travel Scholarship, University of Arizona, 2005
2. Excellent Graduate Tuition Scholarship, University of Arizona, Tucson, Arizona, 2005
3. Outstanding Student Award, Peking University, China, 2000
4. Honor Graduate Award (the highest honor for undergraduates), Lanzhou University, China, 1998

GRANTS & FUNDING

1. Co-Investigator: "Improving the Impact of GPSRO Data Assimilation in the Lower Troposphere" in response to NOAA NESDIS-NESDISPO-2008-2001042: Research in Satellite Data Assimilation for Numerical Weather, Climate, and Environmental Forecast Systems: E. R. Kursinski (PI), Department of Atmospheric Science, University of Arizona, **F. Xie** (Co-I), Department of Earth and Atmospheric Sciences, Purdue University, \$227,373, NA08NES4400015, NOAA, 2008-2009.

2. Co-principal Investigator: IPY (International Polar Year): GPS Radio Occultation Sounding of the Antarctic Atmosphere for Understanding Polar Vortex Dynamics and Climate Feedbacks Between Greenhouse Gases and Ozone, 2007: J. Haase (PI), **F. Xie** (Co-PI), Department of Earth and Atmospheric Sciences, Purdue University, \$1,090,000; NSF; declined due to the lack of funding (with two reviews rated “excellent” and one rated as “Good”). It later resulted in an SGER grant: Antarctic GPS Radio Occultation Profiling from Stratospheric Balloons, J. Haase (PI), Purdue University, \$133,793 SGER, NSF, 2008-2009.